



3747  
PATENT APPLICATION

THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant(s): Gopichandra Surnilla  
John Roth

Serial No.: [Application filed concurrently herewith] 10/064,006  
FILED 6-402

Title: **OVERALL SCHEDULING OF A LEAN BURN ENGINE SYSTEM**

Docket No.: 202-0402

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CERTIFICATE OF MAILING (37 C.F.R. § 1.8(a))

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Information Disclosure Statement

Assistant Commissioner for Patents  
Washington, D.C. 20231

Sir:

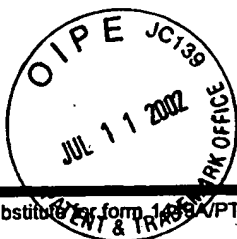
Forms PTO/SB/08A and/or 08B are submitted herewith pursuant to the provisions of 37 CFR 1.97 and 1.98(a) as a means of complying with the requirements of 37 CFR 1.56 with respect to the above identified application. In accordance with Patent Office guidelines, copies of the citations listed on the attached form are enclosed.

Respectfully submitted,

By [Signature]

Allan J. Lippa  
Attorney for Applicant(s)  
Reg. No. 32,258  
Telephone: 313-594-1145

Date: 7-10-02



Substitute for form 1/99 APTO  
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# INFORMATION DISCLOSURE STATEMENT BY APPLICANTS

(use as many sheets as necessary)

Sheet 1 of 7

Complete if Known

Application Number	To be assigned 10/064006
Filing Date	Herewith 6-4-02
Applicants	Sumilla
Group Art Unit	
Examiner Name	
Attorney Docket Number	202-0401

## U.S. PATENT DOCUMENTS

EXAMINER INITIAL*	Cite No. 1	DOCUMENT NUMBER	Kind Code 2 (if known)	NAME	DATE MM-DD-YY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		3,696,318		Boyd et al	10-10-72	
		3,969,932		Rieger et al	07-20-76	
		4,033,122		Masaki et al	07-05-77	
		4,178,883		Herth	12-18-79	
		4,251,989		Norimatsu et al	02-24-81	
		4,622,809		Abthoff et al	11-18-86	
		4,854,123		Inoue et al	08-08-89	
		4,884,066		Miyata et al	11-28-89	
		4,913,122		Uchida et al	04-03-90	
		5,009,210		Nakagawa et al	04-23-91	
		5,088,281		Izutani et al	02-18-92	
		5,097,700		Nakane	03-24-92	
		5,165,230		Kayanuma et al	11-24-92	
		5,174,111		Nomura et al	12-29-92	
		5,189,876		Hirota et al	03-02-93	
		5,201,802		Hirota et al	04-13-93	
		5,209,061		Takeshima	05-11-93	
		5,222,471		Stueven	06-29-93	

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## FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL*	Cite No. 1	Foreign Patent Document			NAME	DATE MM-DD-YY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T 3
		Office 3	Number 4	Kind Code 5 (if known)				
		DE	196 07 151 C1		Siemens AG	07-10-97		
		EP	0 351 197 A2		Johnson Matthey	01-17-90		
		EP	0 444 783 A1		Lucas Industries	09-04-91		

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STATEMENT BY APPLICANTS

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Sheet 2 of 7

Application Number	To be assigned 10/064008
Filing Date	Herewith 6-4-02
Applicants	Sumilla
Group Art Unit	
Examiner Name	
Attorney Docket Number	202-0401

## U.S. PATENT DOCUMENTS

EXAMINER INITIAL*	Cita No. 1	DOCUMENT NUMBER	Kind Code <sup>2</sup> (if known)	NAME	DATE MM-DD-YY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		5,233,830		Takeshima et al	08-10-93	
		5,267,439		Raff et al	12-07-93	
		5,270,024		Kasahara et al	12-14-93	
		5,272,871		Oshima et al	12-28-93	
		5,325,664		Seki et al	07-05-94	
		5,331,809		Takeshima et al	07-26-94	
		5,335,538		Blischke et al	08-09-94	
		5,357,750		Ito et al	10-25-94	
		5,377,484		Shimizu	01-03-95	
		5,402,641		Katoh et al	04-04-95	
		5,412,945		Katoh et al	05-09-95	
		5,412,946		Oshima et al	05-09-95	
		5,414,994		Cullen et al	05-16-95	
		5,423,181		Katoh et al	06-13-95	
		5,433,074		Seto et al	07-18-95	
		<del>5,437,453</del>		<del>Takeshima et al</del>	<del>08-01-95</del>	
		5,448,887		Takeshima	09-12-95	
		5,450,722		Takeshima et al	09-12-95	

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## FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL*	Cita No. 1	Foreign Patent Document			NAME	DATE MM-DD-YY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T <sup>4</sup>
		Office <sup>3</sup>	Number <sup>4</sup>	Kind Code <sup>3</sup> (if known)				
		JP	2-207159		Toyota	08-16-90		
		JP	2-30915		Toyota	02-01-90		
		JP	2-33408		Toyota	02-02-90		
		JP	3-135417		Matsushita Elec.	06-10-91		
		JP	5-106493		Honda	04-27-93		

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Sheet 3 of 7

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Application Number	To be assigned 10/064006
Filing Date	Herewith 6-4-02
Applicants	Sumilla
Group Art Unit	
Examiner Name	
Attorney Docket Number	202-0401

## U.S. PATENT DOCUMENTS

EXAMINER INITIAL*	Cite No. 1	DOCUMENT NUMBER	Kind Code <sup>2</sup> (if known)	NAME	DATE MM-DD-YY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		5,472,673		Goto et al	12-05-95	
		5,473,887		Takeshima et al	12-12-95	
		5,473,890		Takeshima et al	12-12-95	
		5,483,795		Kato et al	01-16-96	
		5,544,482		Matsumoto et al	08-13-96	
		5,551,231		Tanaka et al	09-03-96	
		5,577,382		Kihara et al	11-26-96	
		5,595,060		Togai et al	01-21-97	
		5,598,703		Hamburg et al	02-04-97	
		5,622,047		Yamashita et al	04-22-97	
		5,655,363		Ito et al	08-12-97	
		5,657,625		Koga et al	08-19-97	
		5,693,877		Ohsuga et al	12-02-97	
		5,713,199		Takeshima et al	02-03-98	
		5,715,679		Asanuma et al	02-10-98	
		5,724,808		Ito et al	03-10-98	
		5,732,554		Sasaki et al	03-31-98	
		5,735,119		Asanuma et al	04-07-98	

## FOREIGN PATENT DOCUMENTS

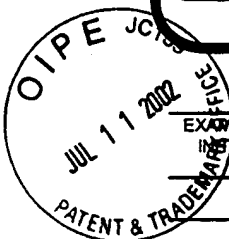
EXAMINER INITIAL*	Cite No. 1	Foreign Patent Document			NAME	DATE MM-DD-YY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T <sup>6</sup>
		Office <sup>3</sup>	Number <sup>4</sup>	Kind Code <sup>5</sup> (if known)				
		JP	5-106494		Honda	04-27-93		
		JP	5-26080		Mitsubishi Motors	02-02-93		
		JP	62-117620		Nippon Shokubai	05-29-87		
		JP	6-264787		Nissan Motor	09-20-94		
		JP	62-97630		Nippon Shokubai	05-07-87		

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STATEMENT BY APPLICANTS

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Application Number	To be assigned <u>10/064008</u>
Filing Date	Herewith <u>6-4-02</u>
Applicants	Sumilla
Group Art Unit	
Examiner Name	
Attorney Docket Number	202-0401

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## U.S. PATENT DOCUMENTS

EXAMINER INITIAL*	Cite No. <sup>1</sup>	DOCUMENT NUMBER	Kind Code <sup>2</sup> (if known)	NAME	DATE MM-DD-YY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		5,740,669		Kinugasa et al	04-21-98	
		5,743,084		Hepburn	04-28-98	
		5,746,049		Cullen et al	05-05-98	
		5,746,052		Kinugasa et al	05-05-98	
		5,752,492		Kato et al	05-19-98	
		5,792,436		Feeley et al	08-11-98	
		5,842,340		Bush et al	12-01-98	
		5,865,027		Hanafusa et al	02-02-99	
		5,970,707		Sawada et al	10-26-99	
		5,974,793		Kinugasa et al	11-02-99	
		5,983,627		Asik	11-16-99	
		6,014,859		Yoshizaki et al	01-18-00	
		4,036,014		Ariga	07-19-77	
		4,964,272		Kayanuma	10-23-90	
		5,410,873		Tashiro	05-02-95	
		5,412,945		Katoh et al	05-09-95	
		5,419,122		Tabe et al	05-30-95	
		5,437,153		Takeshima et al	08-01-95	

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## FOREIGN PATENT DOCUMENTS

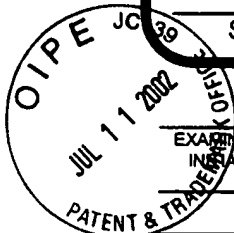
EXAMINER INITIAL*	Cite No. <sup>1</sup>	Foreign Patent Document			NAME	DATE MM-DD-YY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T <sup>6</sup>
		Office <sup>3</sup>	Number <sup>4</sup>	Kind Code <sup>5</sup> (if known)				
		JP	64-53042		Mitsubishi	03-01-89		
		JP	6-58139		Nissan Motor	03-01-94		
		JP	7-97941		Kazuhiro et al	04-11-95		
		<del>EP</del>	<del>0 354 497 A1</del>		<del>Johnson Matthey</del>	<del>01-17-90</del>		
		EP	0 503 882 A1		S. Takeshima	09-16-92		

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INFORMATION DISCLOSURE  
STATEMENT BY APPLICANTS

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Application Number	To be assigned <u>10/004006</u>
Filing Date	Herewith <u>02-4-02</u>
Applicants	Sumilla
Group Art Unit	
Examiner Name	
Attorney Docket Number	202-0401

## U.S. PATENT DOCUMENTS

EXAMINER INITIAL*	Cite No. 1	DOCUMENT NUMBER	Kind Code <sup>2</sup> (if known)	NAME	DATE MM-DD-YY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		5,452,576		Hamburg et al	09-26-95	
		<del>5,463,795</del>		<del>Kato et al</del>	<del>04-16-96</del>	
		5,626,014		Hepburn et al	05-06-97	
		5,626,117		Wright et al	05-06-97	
		<del>5,713,199</del>		<del>Takeshima et al</del>	<del>02-03-98</del>	
		<del>5,716,079</del>		<del>Asanuma et al</del>	<del>02-10-98</del>	
		5,722,236		Cullen et al	03-03-98	
		5,771,685		Hepburn	06-30-98	
		5,771,686		Pischinger et al	06-30-98	
		5,778,666		Cullen et al	07-14-98	
		5,802,843		Kurihara et al	09-08-98	
		5,803,048		Yano et al	09-08-98	
		5,832,722		Cullen et al	11-10-98	
		5,938,715		Zang et al	08-17-99	
		5,974,788		Hepburn et al	11-02-99	
		5,974,791		Hirota et al	11-02-99	
		<del>5,922,142</del> <u>5,972,142</u>		Pott	11-30-99	
		5,996,338		Hirota	12-07-99	

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## FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL*	Cite No. 1	Foreign Patent Document			NAME	DATE MM-DD-YY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T <sup>3</sup>
		Office <sup>3</sup>	Number <sup>4</sup>	Kind Code <sup>5</sup> (if known)				
		EP	0 580 389 A1		Toyota	01-26-94		
		WP	98/27322		Ford Motor Co.	06-25-98		
		JP	7-166851		Toyota	06-27-95		

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**Complete if Known**

Application Number	To be assigned 10/064006
Filing Date	Herewith 6-4-02
Applicants	Sumilla
Group Art Unit	
Examiner Name	
Attorney Docket Number	202-0401

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Sheet 6 of 7

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STATEMENT BY APPLICANT**

(use as many sheets as necessary)

Application Number

To be assigned

Filing Date

~~Herewith~~

Applicants

Surnilla; Roth

Group Art Unit

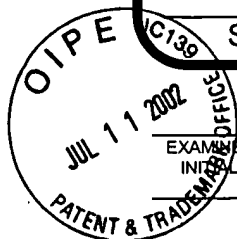
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Attorney Docket Number

202-0402

Sheet

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**OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS**

EXAMINER INITIAL <sup>1</sup>	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published	T <sup>2</sup>
		JOE THEIS et al, "An Air/Fuel Algorithm To Improve The NOx Conversion Of Copper-Based Catalysts", SAE Technical Paper No. 922251, October 19-22, 1992, pp. 77-89.	
		Y. KANEKO et al, "Effect of Air-Fuel Ratio Modulation on Conversion Efficiency of Three-Way Catalysts", INTER-INDUSTRY EMISSION CONTROL PROGRAM 2 (IIEC-2) PROGRESS REPORT NO. 4, SAE Technical Paper No. 780607, June 5-9, 1978, pp. 119-127.	
		ALAN F. DIWELL, "Engineered Control Strategies For Improved Catalytic Control of NOx in Lean Burn Applications", SAE Technical Paper No. 881595, 1998, pp. 1-11.	
		ALLEN H. MEITZLER, "Application of Exhaust-Gas-Oxygen Sensors to the Study of Storage Effects in Automotive Three-Way Catalysts", SAE 800019, February 25-29, 1980.	
		W.H. HOLL, "Air Fuel Control to Reduce Emissions, I. Engine-Emissions Relationships", SAE 800051, February 25-29, 1980.	
		WEI-MING WANG, "Air-Fuel Control to Reduce Emissions, II. Engine-Catalyst Characterization Under Cyclic Conditions", SAE 800052, February 25-29, 1980.	
		CHRISTOPHER D. DE BOER et al, "Engineered Control Strategies for Improved Catalytic Control of NOx in Lean Burn Applications", SAE 881595, October 10-13, 1988.	
		TOSHIAKI YAMAMOTO et al, "Dynamic Behavior Analysis of Three Way Catalytic Reaction", JSAE 882072 - 882166	

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